## ABSTRACT OF THE DISCLOSURE

A data processing system is provided with an instruction (ADD8TO16) that unpacks non-adjacent portions of a data word using sign or zero extension and combines this with a single-instruction-multiple-data type arithmetic operation, such as an add, performed in response to the same instruction. The instruction is well suited to use within systems having a data path (2) including a shifting circuit (6) upstream of an arithmetic circuit (8).

10 [Figure 1.]

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